

REMARKS/ARGUMENTS

Favorable reconsideration of this Application, as presently amended and in light of the following discussion, is respectfully requested.

This Amendment is in response to the Office Action mailed on February 9, 2005. Claims 1-9 and 16-21 are pending in the Application, Claims 1-9 stand rejected, and Claims 10-15 stand withdrawn from consideration. Claims 1, 3, 4 and 8 are amended, Claims 10-15 are cancelled without prejudice or disclaimer, and new Claims 16-21 are added by the present Amendment.

Summarizing the outstanding Office Action, Applicants' specification was objected to because of unidentified informalities. Claims 2, 3-5, and 7-9 were objected to because of informalities. Claims 1-9 were rejected as being unpatentable over Miwa et al. (U.S. Patent No. 6,814,453, hereinafter "Miwa").

Applicants thank Primary Examiner John Ward and Examiner Jason Han for the courtesy of an interview extended to Applicants' representative on March 15, 2005. During the interview, arguments as hereinafter developed were presented. In reply to the objection to Claim 1 based on the assertion that the expression "amorphous glass" was illogical and ambiguous, Applicants' representative explained during the interview that that term is known by those skilled in the art. As a non-limiting example, the dictionary definition of "amorphous" was discussed, which is "having no real or apparent crystalline form; uncrystallized, e.g., an amorphous mineral."<sup>1</sup> Although not mentioned here as limiting the language of the present invention in any way, Applicants submit other U.S. patents that have used the expression "amorphous glass."<sup>2</sup> It was further discussed that Miwa, although disclosing a borosilicate glass, (1) does not teach or disclose an amorphous glass surface

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<sup>1</sup> See, for example, Merriam Webster Dictionary on line.

<sup>2</sup> See, for example, U.S. Patents 5,788,731, 4,835,550, and 4,201,247.

smoothed by heat-treating and (2) is silent with respect to an accuracy of the elliptical or parabolic surface near the opening of a reflector that is less than  $\pm 20$  microns.

As also discussed during the personal interview, conventional reflectors of amorphous glass cannot be used with high reliability in a temperature ranging between 450°C and 550°C because conventional amorphous glass reflectors break at an operational temperature beyond 450°C. For this reason, amorphous glass reflectors have recently been replaced by crystallized glass reflectors.

However, crystallized glass reflectors are expensive to manufacture because of the crystallizing process required by re-heating after a molding process. Crystallized glass reflectors are exposed to high temperatures during molding, e.g., 800 - 900°C, and during crystallization, e.g. 700-800°C. After each of these processes, the reflector cools, which causes shrinking. As a result, the crystallized glass reflector shrinks twice, consequently increasing distortion. Therefore, it is difficult to control precisely the reflective surface shape of crystallized glass reflectors, and to obtain better reflective surface accuracy and intensity of illumination of projection faces. On the other hand, the amorphous glass reflectors of the instant invention are shrunk only once, thereby resulting in superior reflective surface accuracy and intensity of illumination of projection faces as compared to crystallized glass reflectors.

Although no agreement was reached during the interview, Examiner Han indicated in the interview summary (PTOL-413) that "Applicant discussed the novelty of the invention, wherein a reflector comprising amorphous glass, defined as uncrystalized, is heat-treated at an opening of the reflector after opening-drilling in order to remove mechanical damage from the processed part. Applicant further discussed how the prior art of record (Miwa et al.) is deficient with respect to the amorphous glass, and fails to teach the rotational

elliptical/parabolic surface accuracy in the neighborhood of said opening being less than +/- 20 micrometers (re: Claims 5, 7, 9). A new prior art search will be conducted upon receipt of arguments and any proposed amendments.”

As to the objection of Applicants’ Specification, Applicants have submitted replacement for several paragraphs to correct minor informalities and respectfully request reconsideration of the same.

As to the objection to the claims, Applicants have amended Claims 1, 3, 4 and 8, including correction of the cited informalities, and respectfully request reconsideration of the objection thereto. In addition, in view of the present amendment, it is believed that all pending claims are definite and no further rejection on that basis is anticipated. If, however, the Examiner disagrees, the Examiner is invited to telephone the undersigned who will be happy to work with the Examiner in a joint effort to derive mutually acceptable language.

As to the rejection of Claims 1-9 under 35 U.S.C. § 103(a) in view of Miwa, Applicants respectfully submit that Miwa cannot support a *prima facie* case of obviousness of the invention recited in Claims 1 and 8. This is so because, even when combined, this reference does not teach or suggest all the claimed features.

As explained during the personal interview, Miwa does not teach or disclose reflectors made of an amorphous glass having an opening that is smoothed by either heat-treating (Claim 1) or by a burner (Claim 8) after opening-drilling. Contrary to the position taken in the outstanding Office Action, as explained during the interview, current patent examining procedural rules require that patentable weight must be given to structural limitations resulting from process steps.<sup>3</sup> Therefore, since Miwa does not teach or disclose an

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<sup>3</sup> “The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive

amorphous glass as explained, it cannot support a *prima facie* case of obviousness of Claims 1 and 8. In addition, Claims 2-7 and 9 should be allowed, among other reasons, as depending either directly or indirectly from Claims 1 and 8, respectively, which should be allowed as just explained.

In addition, Applicants respectfully submit that Claims 5-7 and 9 patently distinguish over Miwa. Claims 5, 7, and 9 recites an accuracy for the shape of a rotational elliptical or parabolic surface in the neighborhood of a reflector's opening that is +/- 20 microns. Claim 6 recites opening that is smoothed by laser radiation. Miwa is silent with respect to these features, thus the rejection of Claims 5-7 and 9 in the outstanding Office Action fails to properly support a *prima facie* case of obviousness thereof.

For the foregoing remarks, Applicants respectfully request withdrawal of the rejection of Claims 1-9 under 35 U.S.C. § 103(a) in view of Miwa.

Finally, Applicants have submitted new Claims 16-21, which find non-limiting support on the subject matter originally disclosed as follows: (1) as to Claim 16, on page 20, lines 17-21 of Applicants' specification; (2) as to Claim 17 and 18, on page 6, lines 21-26; (3) as to Claim 19, on page 14, line 26 – page 15, line 2; and, (4) as to Claims 20 and 21 on the originally filed claims, on page 16, lines 7-13, and on FIG. 5. Therefore, new Claims 16-21 are not believed to raise a question of new matter.<sup>4</sup> Because Claims 16-19 incorporate by reference all of the features of Claim 1, in view of the above-presented remarks, Applicants respectfully submit that new Claims 16-19 should be allowed over Miwa. In addition, new independent Claim 20 recites an amorphous glass reflector having a fire-polished opening surface with a mean roughness of 0.03 microns or less. As already explained, Miwa does not

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structural characteristics to the final product." MPEP § 2113, citing *In re Garnero*, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979).

<sup>4</sup> See MPEP 2163.06 stating that "information contained in any one of the specification, claims or drawings of the application as filed may be added to any other part of the application without introducing new matter."

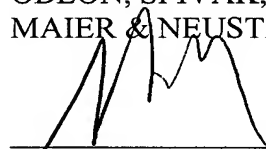
teach or disclose these features, thus, Applicants believe that Claims 20 and 21 patently distinguish from Miwa.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 1-9 and 16-21 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicants' undersigned representatives at the below listed telephone number.

Respectfully submitted,

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